MULTIMEDIA UNIVERSITY®

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2017/2018

DPA5018 – PROGRAMMING FOR BUSINESS APPLICATIONS

(DIT & DBIS)

23 OCTOBER 2017
2.30 p.m. – 4.30 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENT:

1. This booklet consists of **11** pages.
2. **SECTION A**: Answer **ALL** questions on the OMR sheet provided.
3. **SECTION B**: Answer **ALL** questions on the OMR sheet provided.
4. **SECTION C**: Answer **ALL** questions in the answer booklet provided.

SECTION A: MULTIPLE CHOICE QUESTIONS (10 Marks)

Instruction: *Shade your answers on the OMR sheet provided.*

1. Which of the following statements display the words "Programming for Business Applications" in a label named `lblTitle`?
   A. `lblTitle.Name = "Programming for Business Applications"`
   B. `titleLabel.Name. Programming for Business Applications`
   C. `lblTitle.Text = "Programming for Business Applications"`
   D. `"Programming for Business Applications" = lblLabel.Text`

2. If you want to display text which cannot be modified by the user, use the _____.
   A. TextBox control
   B. Label control
   C. Caption control
   D. Name control

3. Which of the following code segments assigns the string "Distinction" to a label named `lblMessage` when the value in the variable `CGPA` is either greater than 3.5, or equal to 3.5?
   A.
   ```
   If CGPA >= 3.5 Then
       lblMessage.Text = "Distinction"
   End If
   ```
   B.
   ```
   If CGPA > 3.5 Then
       lblMessage.Text = "Distinction"
   End If
   ```
   C.
   ```
   If CGPA < 3.5 Then
       lblMessage.Text = "Distinction"
   End If
   ```
   D.
   ```
   If CGPA <= 3.5 Then
       lblMessage.Text = "Distinction"
   End If
   ```

4. What value will be assigned to `dblCommission` after the following code executes?
   ```
   Dim dblMonthlySales, dblCommRate, dblCommission as Double
   dblMonthlySales = 6500.00
   Select Case dblMonthlySales
     Case Is < 1000
       dblCommRate = 0.0
     Case 1000 to 4999.99
       dblCommRate = 0.05
     Case 5000 to 9999.99
       dblCommRate = 0.10
     Case Is >= 10000
       dblCommRate = 0.15
   End Select
   dblCommission = dblCommRate * dblMonthlySale
   ```
   A. 0.00
   B. 325.00
   C. 650.00
   D. 925.00

Continued...

5. What is the difference in the execution of the *First Loop Example* and the *Second Loop Example*?

```
/ First Loop Example /
sngPayAmount = 400
Do Until sngPayAmount > 150
      ' Processing Steps
      sngPayAmount = sngPayAmount - 50
Loop

/ Second Loop Example /
sngPayAmount = 400
Do
      ' Processing Steps
      sngPayAmount = sngPayAmount - 50
Loop Until sngPayAmount > 150
```

A. The first loop will not execute.
B. There is no difference between the two loops.
C. The first loop will execute one more time than the second loop.
D. If the test condition in the second loop is changed to sngPayAmount>=150, the loop will execute

6. What value is assigned to `lblSum.Text` by the following code?

```
Dim intTotal As Integer = 0
For intOuter = 1 To 3
   For intInner = intOuter To 3
      intTotal += intOuter * intInner
   Next
Next
lblSum.Text = intTotal.ToString()
```

A. 16
B. 9
C. 36
D. 25

7. Which one of the given procedure calls does **NOT** pass in valid arguments to the following `GetANumber` subprocedure?

```
Sub GetANumber(ByVal intNumber as Integer)
      ' (procedure body)
End Sub
```

A. `GetANumber(intX)`
B. `GetANumber(intX + 3, intY)`
C. `GetANumber(3 + 5 * 8 + intX)`
D. `GetANumber(Cint(txtNumber.Text))`

Continued...

8. Which of the following code examples is a correctly written function that will accept three integer parameters, calculate their average, and return the result?

A.
```
Private Function Average(intX As Integer, intY As _
Integer, int Z As Integer) As Single
    Average = (intX + intY + intZ) / 3
End Function
```

B.
```
Private Function Average(ByVal intX As Integer, _
ByVal intY As Integer, ByVal intZ As Integer) As _
Single
    Average = intX + intY + intZ / 3
    Return Average
End Function
```

C.
```
Private Function Average(ByRef intX As Integer, _
ByRef intY As Integer, ByRef intZ As Integer, ByRef _
Average As Double)
    Average = (intX + intY + intZ) / 3
End Function
```

D.
```
Private Function Average (ByVal intX As Integer, _
ByVal intY As Integer, ByVal intZ As Integer) As Single
    Return (intX + intY + intZ) / 3
End Function
```

9. In the array declaration below, what is the significance of the number 7?

```
Dim strNames(7) As String
```

A. It is the dimension of the array (number of elements in the array).
B. It is the upper bound (highest subscript value) of the array.
C. It is one greater than the upper bound of the array.
D. It indicates the number of elements in the array.

10. Which of the following is a correct header for a procedure that has a String array parameter named `strStudents`?

A. `Private Sub ArrayParam( ByVal strStudents As String)`
B. `Private Sub ArrayParam(ByRef strStudents As String)`
C. `Sub ArrayParam(ByVal strStudents( ) As String)`
D. `Public Sub ArrayParam(ByVal strStudents( ))`

Continued...

SECTION B: TRUE or FALSE (10 Marks)

Instruction: *Shade your answers* ***(A for TRUE and B for FALSE)*** *on the OMR sheet provided.*

11. Assignment statements execute from left to right, assigning the value on the left side of the equal sign to the property named on the right side of the equal sign.
12. Properties are characteristics of an object such as size, colour etc.
13. The logical operators (*And, Or, Xor, Not*) combine two or more Boolean expressions.
14. `Select Case ... Case Else` statement tests the value of an expression once and then uses that value to determine the result.
15. A counter is a statement that can be incremented or decremented each time a loop runs.
16. `For ... Next` type of loop repeats as long as its loop condition remains True.
17. When a procedure finishes execution, the application branches back to the point from where the procedure was called, and continues to the next program statement.
18. When a parameter is declared using the `ByVal` qualifier, the procedure has access to the original argument variable and may make changes its value.
19. The number of elements in the array is not important when `For Each...Next` loop is use to repeat a set of statements for each element of a collection or array.
20. When changing the number of elements in an array at run-time with the `ReDim` statement, the existing values in the array are destroyed unless the `Reserve` keyword is used.

Continued...

SECTION C: STRUCTURED QUESTIONS (80 Marks)

Instruction: *Write your answers in the answer booklet provided.*

QUESTION 1 (20 Marks)

a) Write codes to perform the following tasks:

i) Display "Candy Buffet Package" in a form's title bar. (2 Marks)

ii) Declare a variable named `calculator` of type *double* and get a string from the text box named `txtCalculator`. (3 Marks)

iii) Create a message dialog box as shown below to display the content. The name (*Maria*) and the package (*A*) are read from text box `txtName` and `txtPackage`, respectively. (4 Marks)

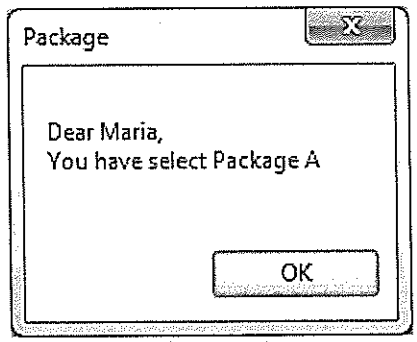

Figure 1.0

b) Identify 5 errors in the code given below. Write the number of line of errors found and correct the statements. (5 Marks)

Line

```
1. Private Sub btnCompute_Click(...)Handles btnCompute
2.  Dim num1 As Double = 5.5, num2 As double = 7
3.  Dim Total As Double
4.   'Calculate total
5.      Total = getSum()
6.   'Display total using textbox
7.      Total = txtAnswer.Text
8.  End Sub
9.  Sub getSum(n1 As Double, n2 As Double)
10.   Dim total As Double
11.     total = num1 + num2
12.     Return
13. End Sub
```

Example:

Line 1: Private Sub btnCompute_Click(...) Handles btnCompute.Click

Continued...

c) What will be the output of the following program when the `btnDisplay` is clicked?

i)
```
Private Sub btnDisplay_Click(...) Handles _
btnDisplay.Click
  Dim x As Double = 3, y As Double = 1
  Dim z As Double
  z = x + (y * x)
  x = y
  z = x + z
  lstBox.Items.Add(z)
  lstBox.Items.Add(x + y + z)
End Sub
```
(2 Marks)

ii)
```
Private Sub btnDisplay_Click(...) Handles _
btnDisplay.Click
  Dim num As Double = 9
  Dim sqrRoot As Double
  If num < 0 Then
    MessageBox.show("Cannot find square root-result _
    set to zero", "Error")
    sqrRoot = 0
  Else
    sqrRoot = Math.Sqrt(Num)
  End If
  txtBox.Text = CStr(sqrRoot)
End Sub
```
(1 Mark)

iii)
```
Private Sub btnDisplay_Click(...) Handles
btnDisplay.Click
  Dim num as Double = 10
  Do While num > 1
    lstBox.Items.Add(num)
    num = num - 3
  Loop
End Sub
```
(3 Marks)

Continued...

QUESTION 2 (20 Marks)

a) Determine the value of each variable after each line is executed from *line 2* to *line 9*. (5 Marks)

Line

```
1.  Private Sub btnEvaluate_Click(...)Handles _
    btnEvaluate.Click
2.  Dim n, m As Double
3.  n = 2
4.  m = 5
5.  lstOutput.Items.Add(3 * n)
6.  n += n
7.  lstOutput.Items.Add(n + m)
8.  m = m * n
9.  lstOutput.Items.Add(n - m)
10. End Sub
```

Example:

Line	n	m
2	0	0
3	2	0
4	2	5

b) Based on the *Table 2.0* given, write the `Select Case` statements to display the message in a text box named `txtDisplay` which depending on the value of variable N. (8 Marks)

N	message
1	"too small"
2	"small"
3	"just right"
4	"large"
5	"too large"

Table 2.0

c) Determine each of the following expressions is TRUE or FALSE: (7 Marks)

```
Dim a As Double = 5, b As Double = 5, c As Double = 10
```

i) `(a == b) And (c > b)`

ii) `(a == b) And (c < b)`

iii) `(a == b) Or (c < b)`

iv) `(a <> b) Or (c < b)`

v) `(a == b) Or (c <> b)`

vi) `Not(a <> b)`

vii) `Not(a == b)`

Continued...

QUESTION 3 (20 Marks)

a) Based on the instruction bellow, write a Visual Basic program to calculate the total of sales and the bonus gained by a salesperson based on the total sales he/she made in that month when `btnTotal` is clicked. (15 Marks)

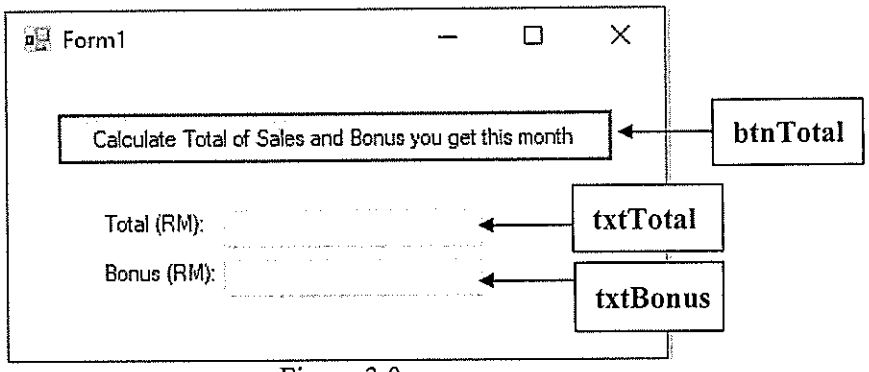

Figure 3.0

- Declare variables `sum` and `bonus` as type *double*.
- Use an input box (*refer to Figure 3.1*) to prompt user to enter the number of sales, `n`, for that month.
- Based on the value of `n`, declare an array named `sales` to store the amount of each sales.
- Use `For... Next` to prompt the user to get the amount of sales via input box and store in array `sales` (*refer to Figure 3.2(a) – Figure 3.2(c)*).
- Call a function named `Total (...)` by passing the array `sales` as a parameter.
  - This function is used to calculate the `sum` of the amount of sales that stored in the array. (Note: Declare the variables if necessary.)
  - The `sum` is returned.
- Based on the `sum` of the sales, determined the `bonus` as shown in *Table 3.0*.
- Display the `sum` and `bonus` in textboxes as shown in *Figure 3.3*.

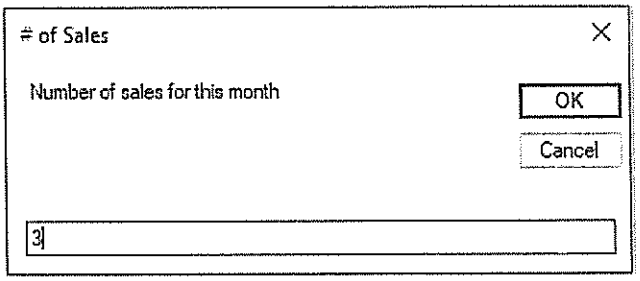

Figure 3.1

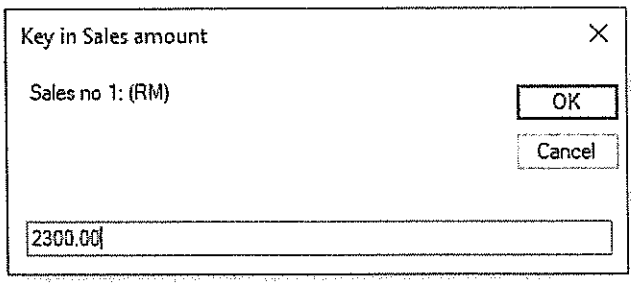

Figure 3.2 (a)

Continued...

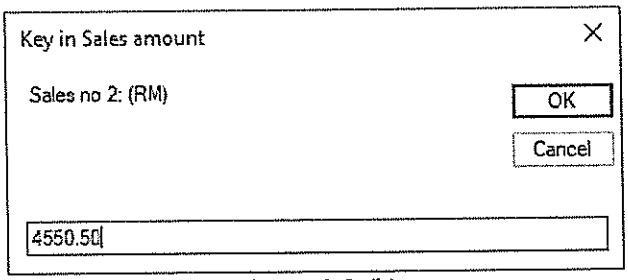

Figure 3.2 (b)

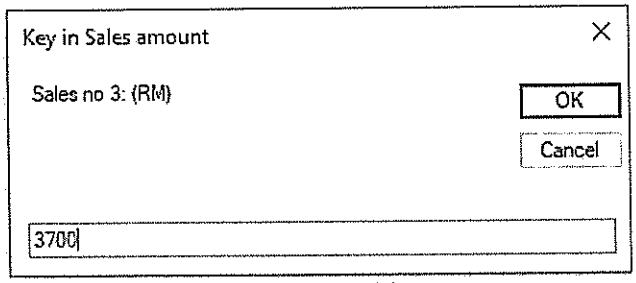

Figure 3.2 (c)

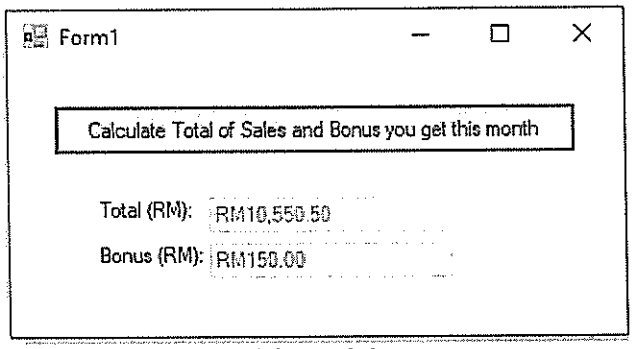

Figure 3.3

Total (RM)	Bonus (RM)
Less than 4000	0
Less than 7500	50
Less than 10000	100
More than or equal to 10000	150

Table 3.0

b) Based on the instruction given below, write a Visual Basic program to convert a number to word when `btnConvert` is clicked. (5 Marks)

- Initialise an array named `word` with the following values.
  One, Two, Three, Four, Five, Six, Seven, Eight, Nine, Ten
- Based on the input in `txtNum`, displays the number in word in `txtWord` as shown in *Figure 3.4*.
- As shown in *Figure 3.5*, if the number is not between 1 to 10, the message "*Sorry, number is out of range*" will be displayed in `txtWord`.

Continued...

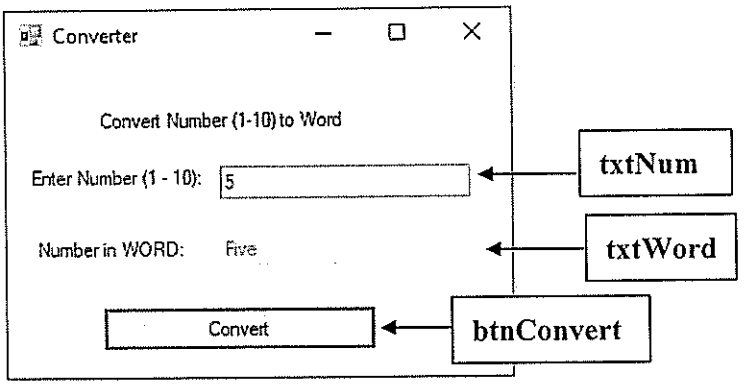

Figure 3.4

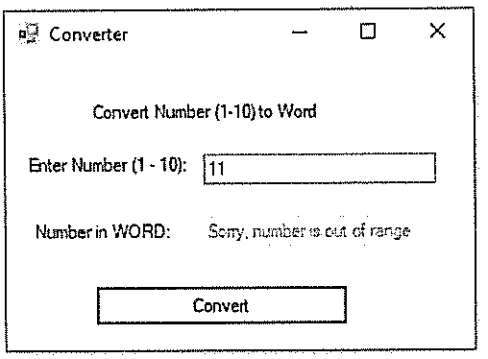

Figure 3.5

Continued...

QUESTION 4 (20 Marks)

a) The program below called a sub procedure named `CalculateAverage(...)` to calculate average of three decimal numbers.

```
Dim num1, num2, num3 As Double
Dim ans As Double = 0
num1 = 2.3
num2 = 6.4
num3 = 7.7
'Calling statement for sub procedure CalculateAverage
_____(i) _____
txtAnswer.Text = ans
```

- Write a calling statement in `(i)`. (1.5 Marks)
- Write a sub procedure that receives four parameters type *double* (*the first three passed by value and the last variable passed by reference*). The sub procedure that should use the first three parameters to calculate the average and then store the result in the fourth parameter. The answer is round into 2 decimal places. (7 Marks)

b) Complete the code below to read the two lines from `addressFile` and place the data in two variables named `strName`, and `strCity`. (5.5 Marks)

```
Private Sub btnRead_Click(...) Handles btnRead.Click
  Dim addressFile As _____(i) _____
  addressFile = _____(ii) _____ ("address.txt")
  strName = _____(iii) _____
  _____(iv) _____ = addressFile.ReadLine()
  _____(v) _____
End Sub
```

c) Given a form load event procedure; write a code segments when the application is loaded to memory, records from *Student* table in Microsoft Access file named *MultimediaUni.accdb* will be displayed in *DataGridView* named `dvgProfile`. The data is loaded through *OLEDB Data Adapter* into the *DataTable* object called `dtProfile`. (6 Marks)

```
Dim connStr As String="Provider=Microsoft.ACE.OLEDB.12.0;_
DataSource=MultimediaUni.accdb"
Private Sub frmDBProfile_Load(...) Handles MyBase.Load

End Sub
```

End of Page.